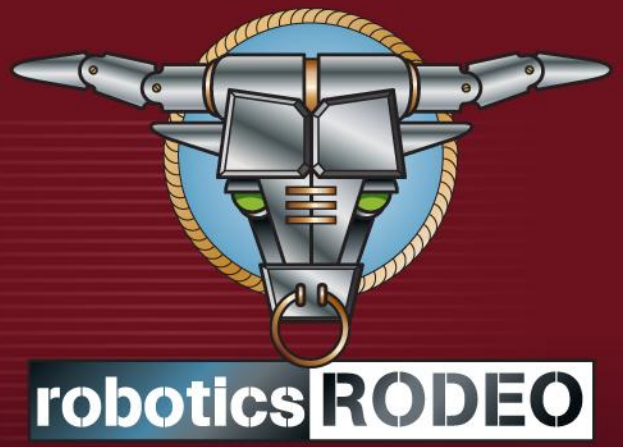
Briefing to Industry

15 June 2009



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TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Agenda

- Introductions
- Review of Operational Need Statement (ONS) & Vignettes
- Overview of Rodeo
  - Extravaganza
  - Robotics Technology Observation, Demonstration and Discussion (RTOD2)
    - Overview
    - Facilities
    - Starter Packet
- Q and A

ONS Overviews

Autonomous Detection Vehicle

- Autonomous route investigation and hazard marking
- Fundamentally an appliqué kit for a vehicle
- Leverage previous work by Night Vision Laboratory

Convoy Logistics

- Kit-based system for Tactical Wheeled Vehicles
- Automated leader-follower
- User assessment at Fort Hood in the September – October timeframe

Robotics Rodeo

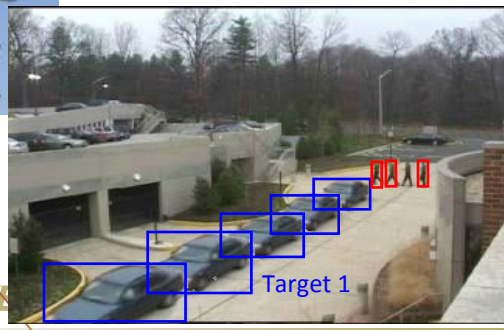
- Input from Army needs (ONS)
- Demonstration of related state of the art technologies
- Provide user and SME feedback to industry

Robotic Wingman

- Large armed robotic platform assumes role as a member of squad / formation
- Leverage existing ARDEC, AMREC, CERDEC technologies and Fort Hood rodeo for target acquisition and engagement capability

Persistent Stare

- Small robot with autonomous navigation to perform recon and surveillance
- Utilize robotic rodeo to demonstrate vendor capabilities



VOIED Defeat

- Capability for autonomous VOIED defeat
- Utilize robotic rodeo to demonstrate vendor capabilities
- HMMWV and M113 target platforms

TECHNOLOGY DRIVE

Rodeo overview

Rodeo Overview

Mission Statement

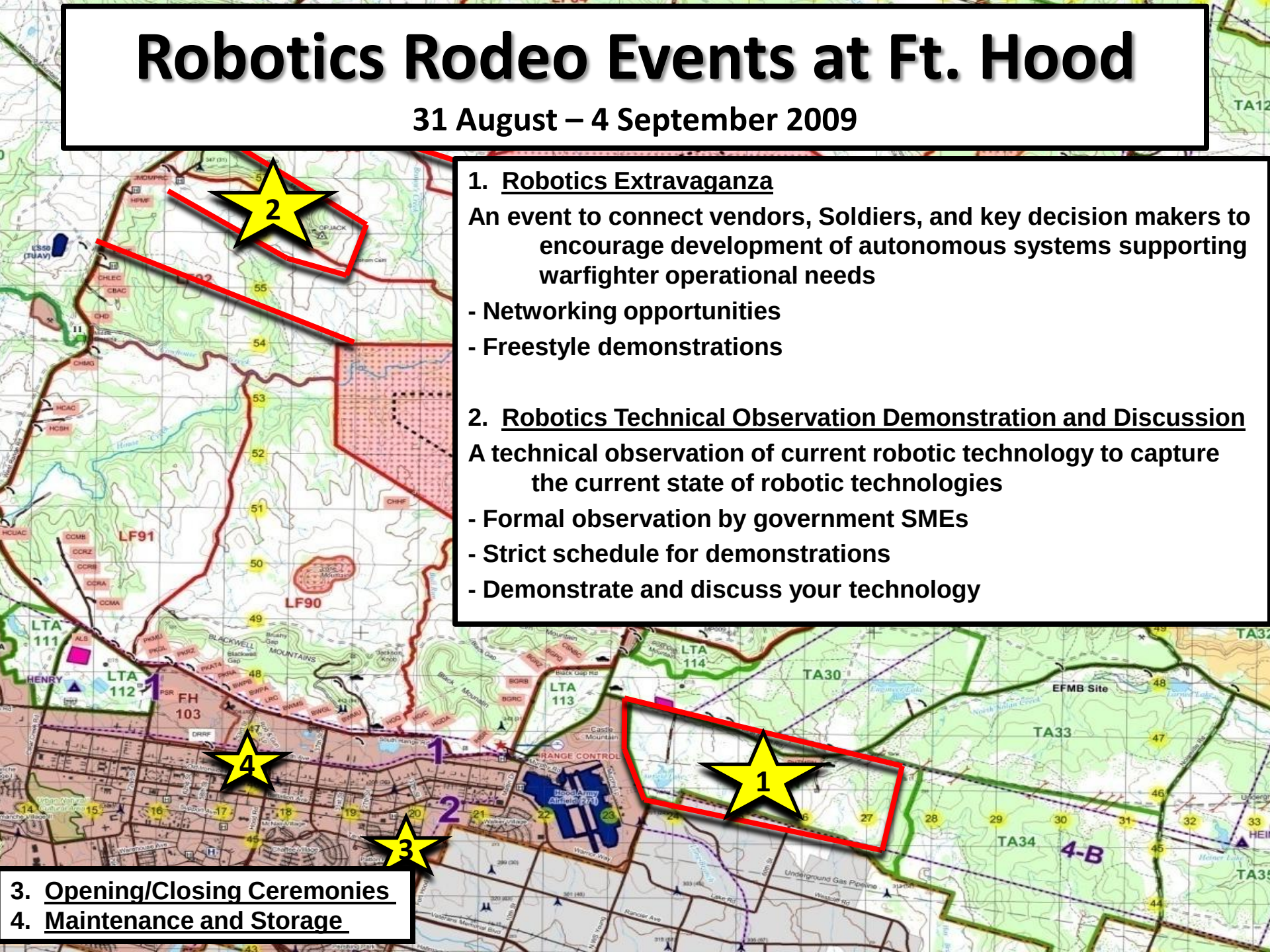
III Corps and TARDEC hosts a Robotics Rodeo from 31 August to 4 September on Fort Hood to **motivate** key decision makers and the robotics industry, **educate** Soldiers and developers, and **observe** demonstrations of the current state of robotic technologies in order to encourage the development of robotic systems supporting warfighter operational needs.

Objective

A combination of task-based open events and 'free style' demonstration for **market research, not source selection**. This will be an opportunity for all the robotics industry that have products that are at or above TRL 6 to demonstrate them in a **military operating environment**.

Robotics Rodeo Events at Ft. Hood

31 August – 4 September 2009



1. **Robotics Extravaganza**

An event to connect vendors, Soldiers, and key decision makers to encourage development of autonomous systems supporting warfighter operational needs

- Networking opportunities

- Freestyle demonstrations

2. **Robotics Technical Observation Demonstration and Discussion**

A technical observation of current robotic technology to capture the current state of robotic technologies

- Formal observation by government SMEs

- Strict schedule for demonstrations

- Demonstrate and discuss your technology

3. **Opening/Closing Ceremonies**
4. **Maintenance and Storage**

Extravaganza overview

What is It?

- What is the Robotics Extravaganza?
  - A networking opportunity
  - Interaction between industry, Soldiers and Government representatives
  - Opportunity to discuss robotics with key decision makers
  - Freestyle demonstration
  - Vendor booths
  - Lower TRLs
- Submit Technology Application Ideas (TAIs) in the starter packet format to Rodeo mailbox
  - DAMI_RoboticsRodeo@conus.army.mil
- Submit request to participate in the Extravaganza alone to Rodeo mailbox
  - DAMI_RoboticsRodeo@conus.army.mil

BL - *Generates excitement for robotics*

What is in it for Industry?

- **An opportunity to physically demonstrate component technologies**
  - Clabber Creek Range, Jack Mountain Range, Phantom Run (including IED lanes), and Combined Arms Collective Training Facility (CACTF)
- **A single point of contact for both the Government & Contractors**
- **Improved visibility**
- **Enhanced communication**
  - Gain access to PEO and PMs
  - Gain access to users, testers, and requirement developers
  - Gain access to senior Army leaders
  - Gain access to other OEMs
  - Opportunity to identify potential industry partners

An opportunity to gain feedback on products and technologies

Robot Extravaganza
(Phantom Run)

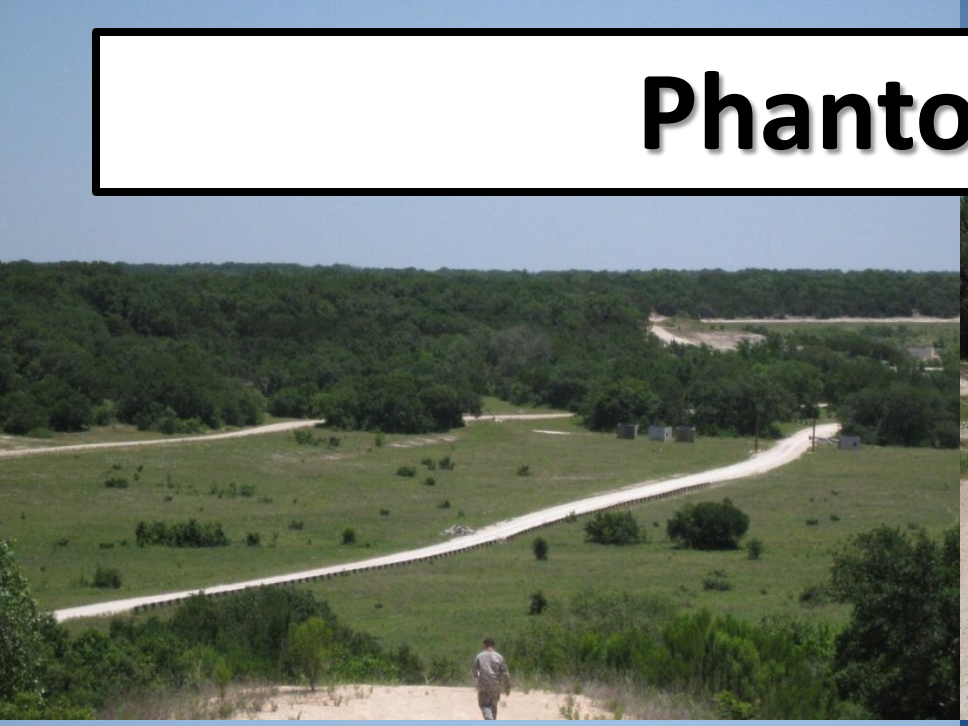
Task: Connect vendors , Soldiers, and key decision makers

Purpose: Encourage development of robotic systems supporting warfighter operational needs

1. Dropoff & Reception
2. VIP Briefing Room
3. Vendor Booths
4. Demo Area
5. On-Deck Circle
6. Operations Center
7. Concessions Area

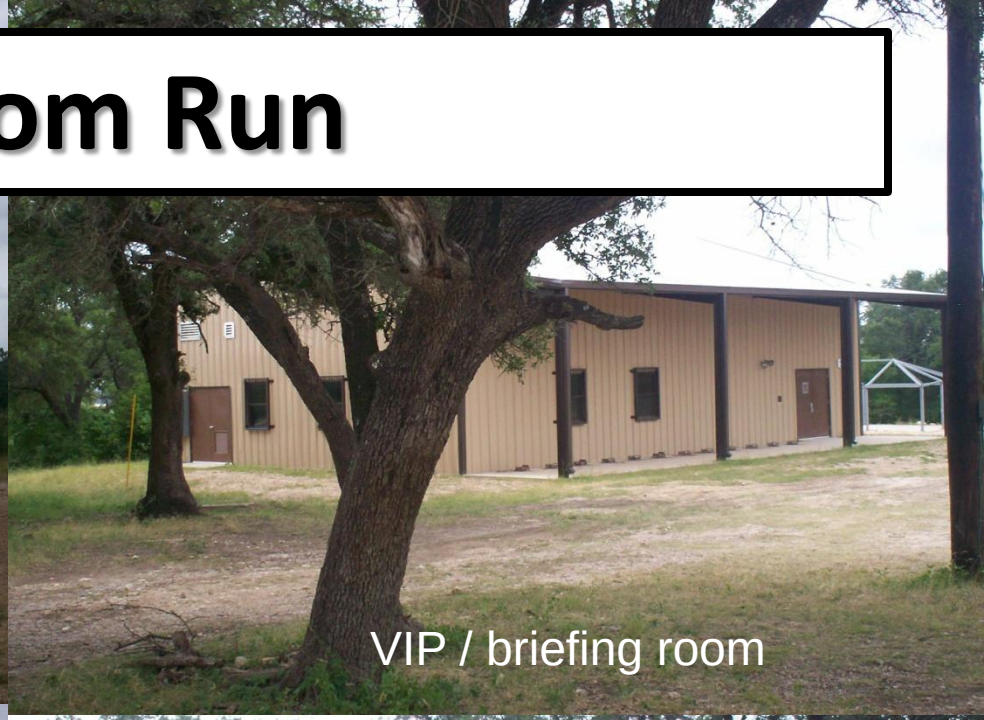
Phantom Run

Phantom Run



Phantom Run

Registration


VIP / briefing room

IED lanes

IED training site

Phantom Run Warm Up Area

RTOD2 overview

RTOD2—What is It?

- What is RTOD2?
  - Robotic Technology Observation, Demonstration and Discussion (RTOD2)
  - Multi-phased, continuous process designed to improve robotic capabilities
  - Lead is Intelligent Ground Systems (IGS) at TARDEC but work very closely with Joint Center for Robotics also at TARDEC and PM Robotic Systems Joint Project Office (PM RS-JPO)
  - Identify & leverage Industry's investment in advanced technologies
  - Provide both the Government & Contractors a single point of contact
- Qualification
  - Technology Readiness Level (TRL) 6
  - Actual system completed/qualified through test & demonstration (no R&D)
- Submit Technology Application Ideas (TAIs) in the starter packet format to Rodeo mailbox
  - DAMI_RoboticsRodeo@conus.army.mil

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- Supports Army's Robotics Vision through a disciplined approach

Key Participants

User

- III Corps
- Training and Doctrine Command (TRADOC)
- Army Capabilities Integration Center (ARCIC)
- CASCOM

PEO / PM

- RS-JPO Acquisition office responsible for the Army's robotic equipment
- FCS unmanned systems
- PEO CS/CSS and others

Other Organizations

- HQDA
- JGRE
- Test Community
- Other PMs
- Other Agencies

RTOD2 Observation Teams

Research & Development

- TARDEC
- ARL
- RDECOM
- ARDEC
- Natick
- AMRDEC
- SPAWAR
- DARPA

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- Diverse viewpoints represented through process

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  - Gain access to PEO and PMs
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An opportunity to gain feedback on products and technologies

Desired Capabilities

- Emphasis on following robotic capabilities:
  - Large and Small Autonomous Mobility
  - Small Robotic Applications
  - Sensors/ Reconnaissance, Surveillance, and Target Acquisition (RSTA)
  - General Robotics

- And these scenarios:
  - Persistence Stare
  - Convoy Operations
  - Manned/ Unmanned Teaming
  - Route Clearance

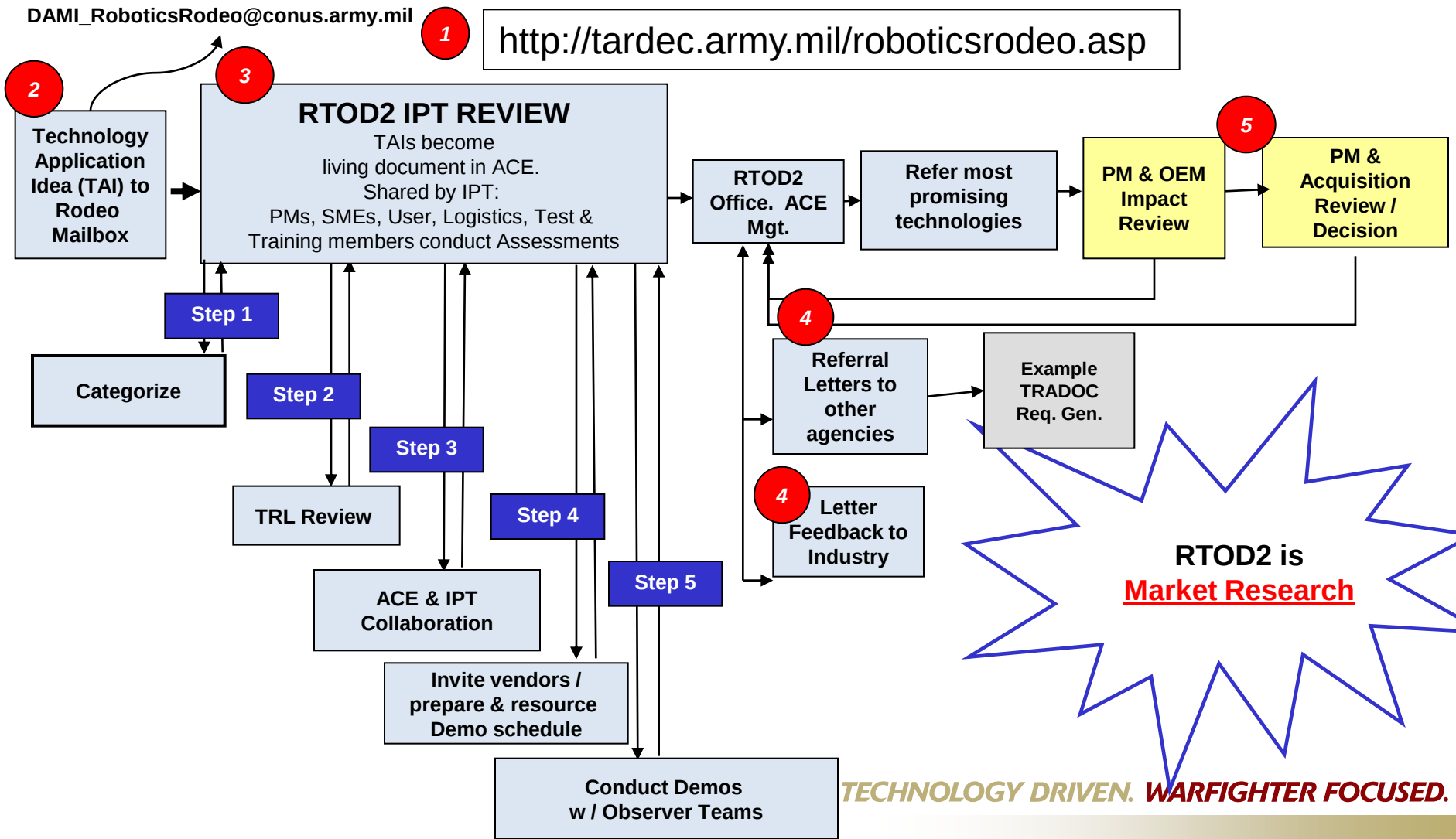
- Desired capabilities addresses identified gaps
- RTOD2 in sync with the User

How do I Start?

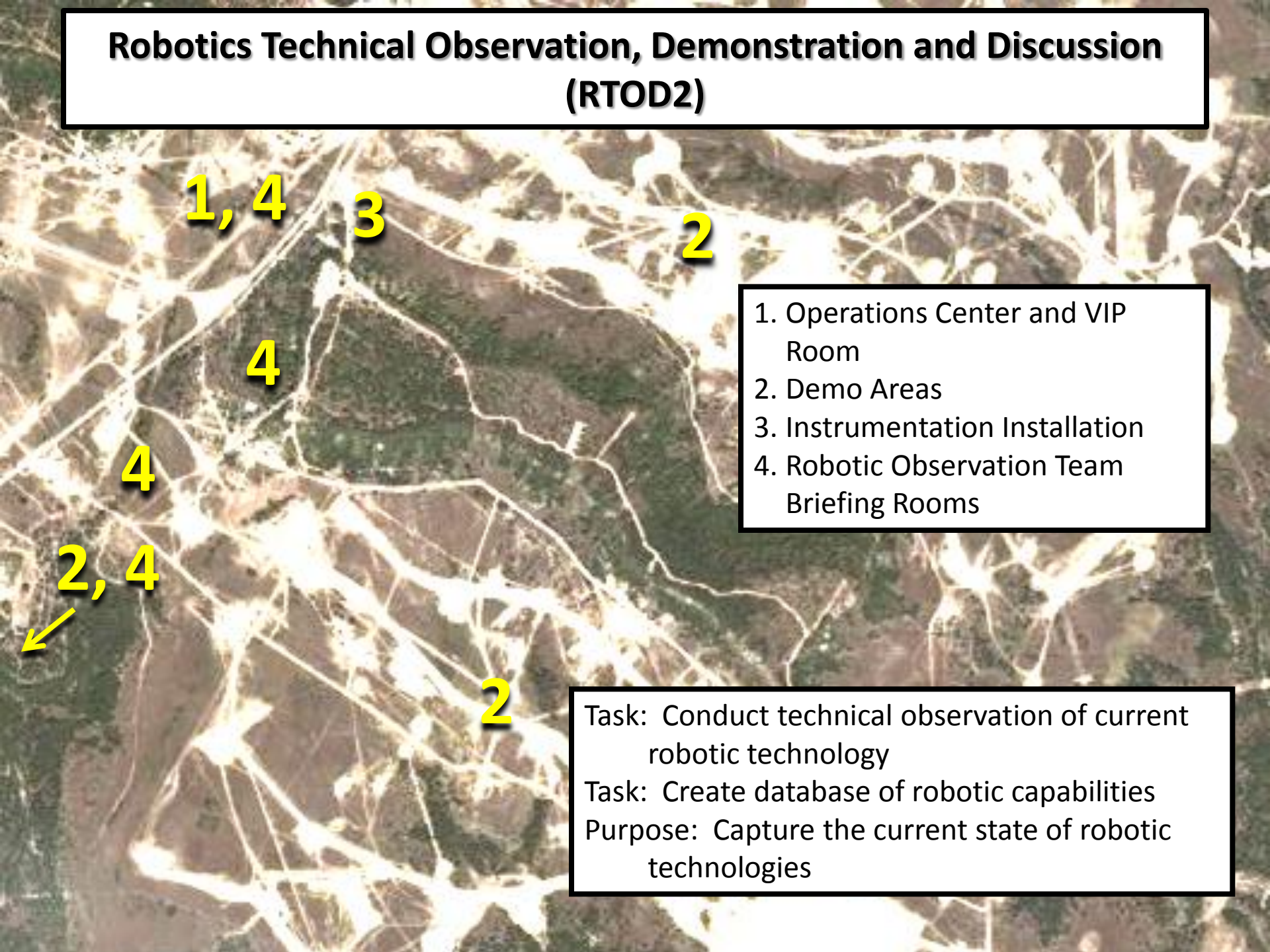
- How Manufacturers can obtain more information:
  - Web site for latest Rodeo information
  - **http://tardec.army.mil/roboticsrodeo.asp**
- How to get engaged:
  - Submit Technology Application Ideas (TAIs) in starter packet format to TARDEC mailbox at **DAMI_RoboticsRodeo@conus.army.mil**
  - Submit TAIs at any time – window closes 8 July 2009.
- Demo Plans will be requested after an initial review
- Schedules will be published not later than 19 August at GVSETS.

RTOD2 Process

Overview of activities from vendor submission to Government referrals



Robotics Technical Observation, Demonstration and Discussion (RTOD2)



1. Operations Center and VIP Room
2. Demo Areas
3. Instrumentation Installation
4. Robotic Observation Team Briefing Rooms

Task: Conduct technical observation of current robotic technology

Task: Create database of robotic capabilities

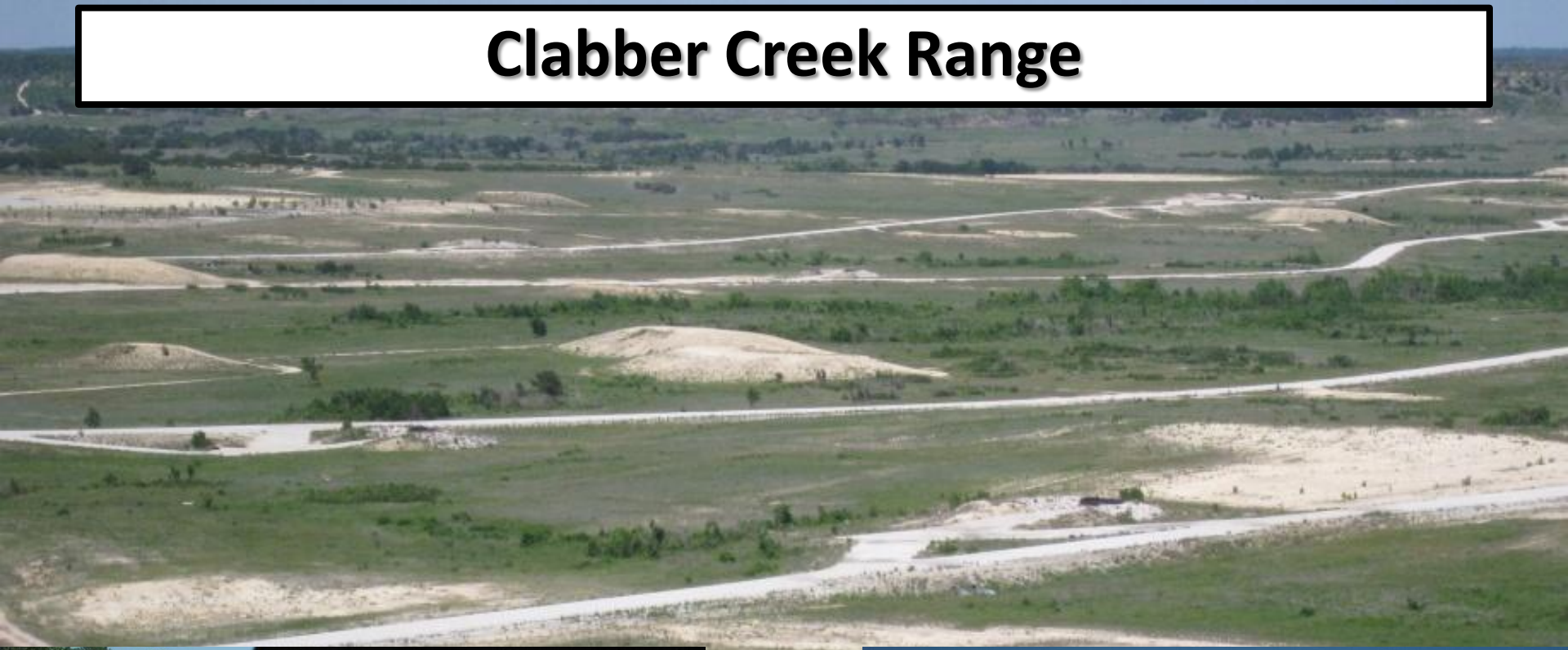
Purpose: Capture the current state of robotic technologies

Range Operations Center (ROC)

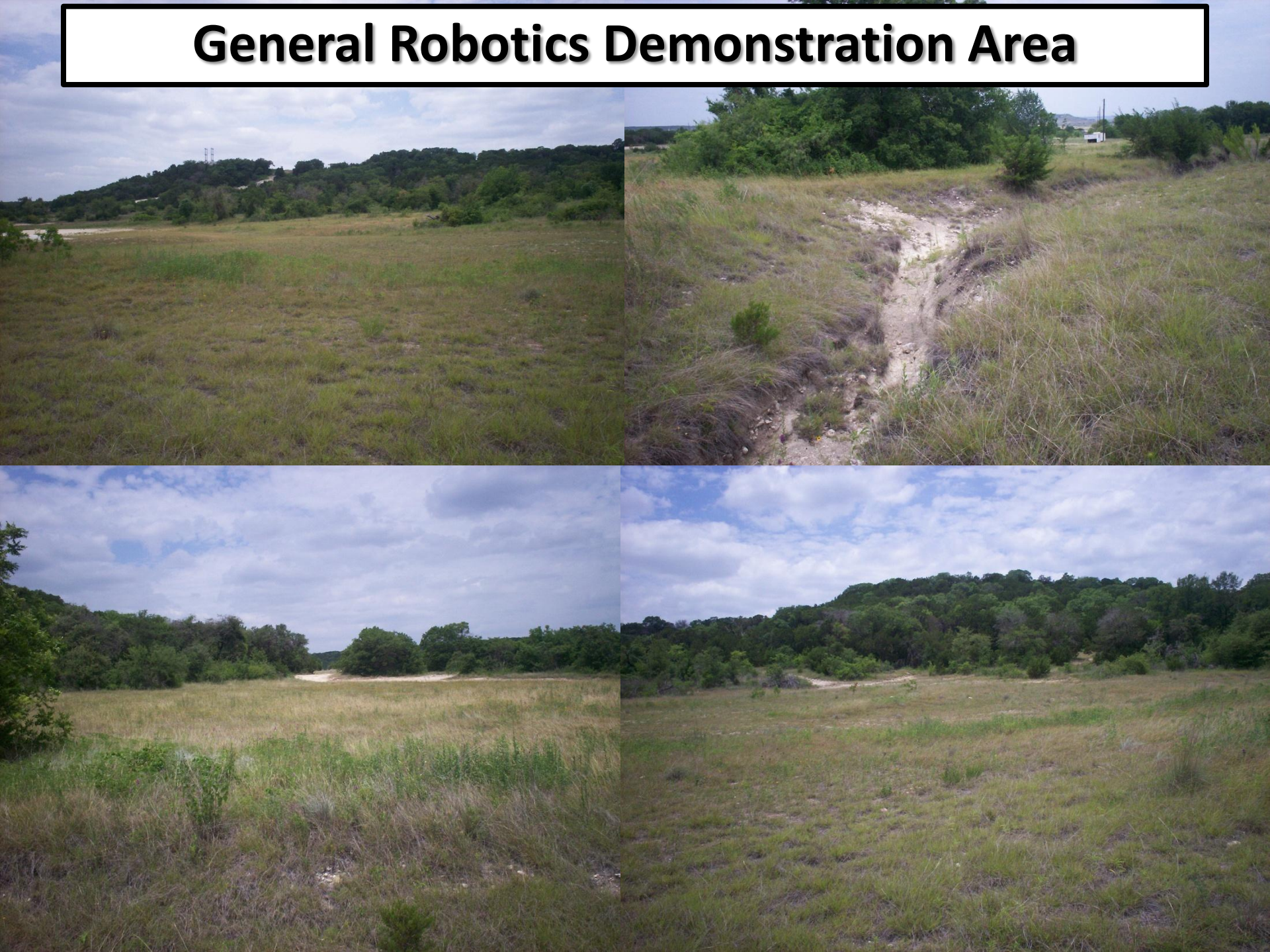
ROC

View from the ROC

Clabber Creek Range



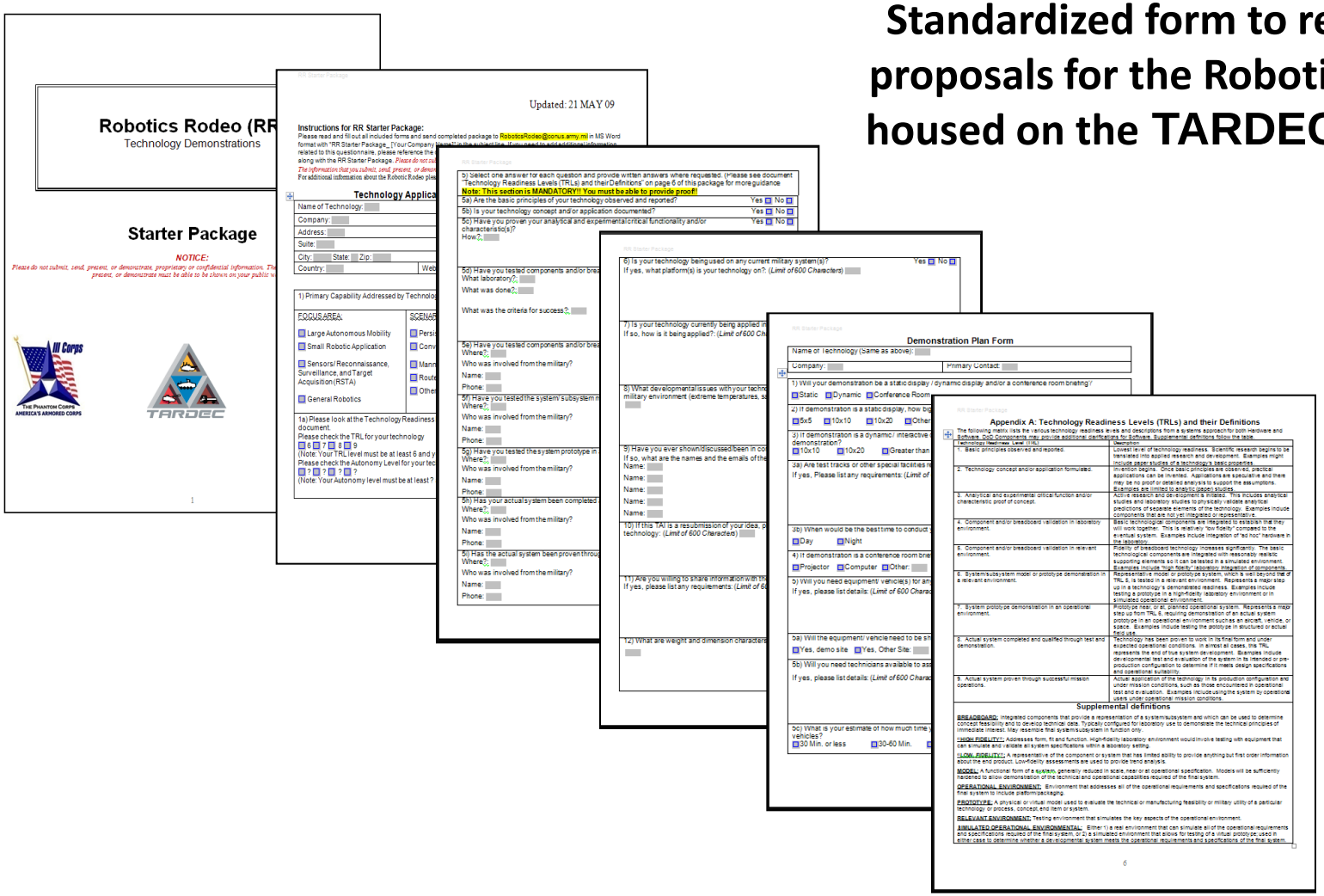
General Robotics Demonstration Area



Combined Arms Collective Training Facility (CACTF)

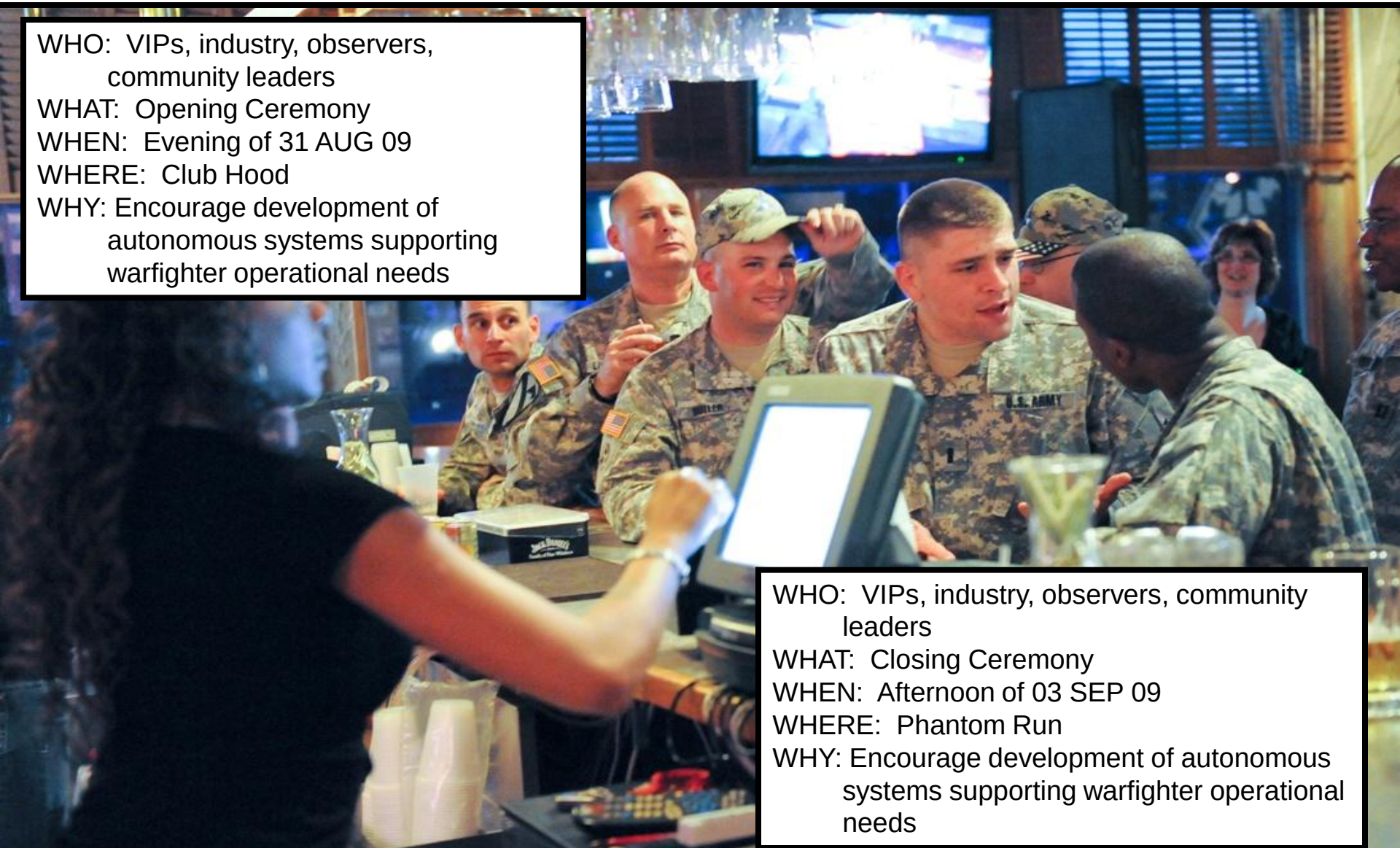
Presentation Room

Submission Form



Standardized form to review all proposals for the Robotics Rodeo housed on the TARDEC website

Opening/Closing Ceremonies
(Club Hood & Phantom Run)



WHO: VIPs, industry, observers, community leaders
WHAT: Opening Ceremony
WHEN: Evening of 31 AUG 09
WHERE: Club Hood
WHY: Encourage development of autonomous systems supporting warfighter operational needs

WHO: VIPs, industry, observers, community leaders
WHAT: Closing Ceremony
WHEN: Afternoon of 03 SEP 09
WHERE: Phantom Run
WHY: Encourage development of autonomous systems supporting warfighter operational needs

What we owe you

- Details on the participation fee for RTOD2 and the Extravaganza
- Extravaganza only request form
- After reviewing the submissions:
  - Vendor demonstration plan
  - Schedule for both RTOD2 and the Extravaganza
- Keep checking the website for the latest Rodeo information!

Questions?